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Planning Applications Group

Tony Gee
Consulting Engineers

Bean Tunnel

Road Safety Audit Stage 2 - Designer Response Report

Kent County Council

Document no: BRT-TG-XX-ZZ-RP-HS-0104

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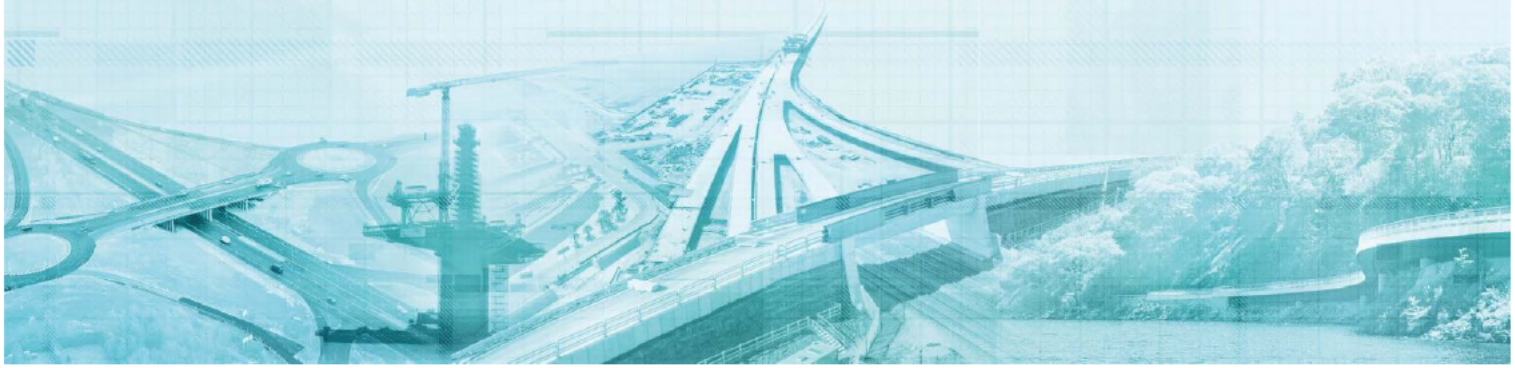

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Document Issue Record

Project:	Bean Tunnel
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P01	18/03/21	First Issue	LD	MJH	MJH
P02	22/06/21	Clients' responses incorporated	LD	MJH	MJH

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3. Key Personnel 5
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5. Design Organisation and Overseeing Organisation Statements 10

Appendix

Appendix A – RSA Stage 2 Report

1. Project Details

Table F1: Project Details

Report title:	Road Safety Audit Stage 2 - Designer Response Report
Date:	19/03/2021
Document reference and revision:	BRT-TG-XX-ZZ-RP-HS-0104 Rev: P01
Prepared by:	Tony Gee & Partners LLP (TG)
On behalf of:	Kent County Council

Table F2: Authorisation Sheet

Project:	Bean Tunnel
Report title:	Road Safety Audit Stage 2 - Designer Response Report
Prepared by:	
Name:	Lidia Derossi
Position:	Design Engineer
Signed:	[redacted]
Organisation:	Tony Gee and Partners LLP
Date:	19/03/2021
Approved by:	
Name:	
Position:	
Signed:	
Organisation:	Kent County Council
Date:	XX/XX/2021

2. Introduction

This report provides responses from the Design Organisation (Tony Gee and Partners LLP) and the Overseeing Organisation (Kent County Council) to the Stage 2 Road Safety Audit (RSA) problems identified by Acorns Project Limited for the Bean Tunnel project and documents the agreed RSA actions for each.

The Road Safety Decision Log (Section 4) includes a summary of any RSA problems raised. For full details of problems raised refer to the Stage 2 RSA report contained within Appendix A.

3. Key Personnel

Table F3: Key Personnel

Overseeing Organisation:	
RSA Team:	Adriano B. Cappella – Audit Team Leader, Acorns Projects Limited Lisa Allen – Audit Team Member, Acorns Projects Limited
Design Organisation:	Matthew Hammond – Highways Director, Tony Gee & Partners LLP Lidia Derossi – Design Engineer, Tony Gee & Partners LLP

4. Road Safety Audit Decision Log

RSA problem	RSA recommendation	Design Organisation response	Overseeing Organisation Response	Agreed RSA action
Location 1 - Bluewater Parkway roundabout with Lime Tree Avenue (Drawing No. BRT-TG-XX-ZZ-DR-HI-1201 Rev P01) Collisions may occur between vehicles at the roundabout Traffic flows heading northbound on Bluewater Parkway were not heavy but it was observed that traffic would queue from the northern roundabout back on to the southern roundabout. A new Toucan crossing may exacerbate this problem and traffic may queue back onto the southern roundabout more regularly. This could cause congestion and frustration amongst motorists, resulting in collisions between vehicles.	Provide a yellow box marking across the southern roundabout, similar to the existing marking on the northern roundabout	Disagree Schedule 9 General Direction 9 prohibits the use of yellow box markings (S9-6-25, see section 8) on roundabouts unless the entry of traffic is under full-time signal control on that part of the roundabout where the marking is to be provided (see TSM, chapter 5, section 6). Given the absence of clear history of queues at the junction and the limited changes to its capacity caused by the proposed works, we propose to omit the yellow box markings. If queuing is recorded by following RSAs, the markings can be easily installed as mitigation measure.	KCC: Agree with DO response and follow up with future RSA's Bluewater: Yellow box markings are present only on one key roundabout at the current time. I am not actually sure they would be effective in any event.	Monitoring post-opening to confirm no yellow box junction markings are needed
Location 2 - Bluewater Parkway north bound carriageway	Provide hoods or louvres to ensure that the green light is	Agreed	KCC: Agree with DO response. Hoods and louvres to be	Traffic Signals fitted with hoods and louvres

RSA problem	RSA recommendation	Design Organisation response	Overseeing Organisation Response	Agreed RSA action
(Drawing No. BRT-TG-XX-ZZ-DR-HI-1201 Rev P01). Collisions may occur between vehicles and pedestrians or cyclists. The alignment of the northern approach to the signals may mean that motorists see a green light for the bus route and fail to see a red light for the Toucan crossing. This could result in vehicles overrunning the red light and collisions between vehicles and pedestrians or cyclists	only visible to bus drivers at the stop line. The Audit Team would add that the Toucan Crossing traffic signal design drawing has yet to be completed and was not available for this Stage 2 Road Safety Audit.	The Traffic Signals design will be developed considering this recommendation.	considered with traffic signal detail design Bluewater: Generally agree with the responses, provided they are addressed.	
Location 3 - The northern verge area of Lime Tree Avenue (Drawing No. BRT-TG-XX-ZZ-DR-HI-1201 Rev P01). Cyclists may collide with the posts for the roundabout advanced direction sign (ADS). The posts for the roundabout sign on Lime Tree Avenue are close together and non-motorised users will not be	Ensure that the signposts do not create a pinch point on the shared use path. The Audit Team would add that the existing advanced direction sign (Ref: ES02), has sustained collision damage since the Stage 1 Road Safety Audit. This now presents an ideal opportunity to locate the advanced direction sign to the rear of the proposed shared footway/cycleway, thus	Agreed ADS sign ref. ES02 is proposed to be located at the back of the verge. We can investigate the use of cantilever solution as opposed to standard two posts, or space the posts in such way not to create pinch points. This design will be carried out following site clearance and confirmation	KCC: Agree with DO response. Sign location and support to be reviewed with sign detail design Bluewater: Generally agree with the responses, provided they are addressed.	Sign location moved to the back of the verge

RSA problem	RSA recommendation	Design Organisation response	Overseeing Organisation Response	Agreed RSA action
able to pass between them safely. Cyclists may collide with the posts or users may be forced into the live carriageway to pass one another, resulting in collisions with vehicles	maximising the shared facility width with no impediments. It is also Recommended that the existing advanced direction sign should be erected on a single cantilever post	of the dimensions of the existing sign.		
Location 4 - B255 and Bluewater Parkway south bound carriageway (Drawing No. BRT-TG-XX-ZZ-DR-HI-1201 Rev P01). Collisions may occur between vehicles and pedestrians or buses. There are several signs on the eastern verge of the B255 and Bluewater Parkway carriageway that may obstruct motorists' forward visibility to the signal heads for the Toucan crossing/bus junction. Providing a 'Traffic Signals Ahead' (to diagram 543) could contribute to this problem. This could mean that motorists fail to see the nearside signal head, resulting in motorists running	Undertake a signing assessment and remove or relocate signing to improve motorists' forward visibility to the nearside signal head	Agreed We will undertake a sign assessment and confirm the visibility lines to the pedestrian crossing. If the visibility is affected, we will propose to move the sign further North, to ensure the visibility lines are not obstructed.	KCC: Agree with DO response. Sign assessment to be reviewed with sign detail design Bluewater: Generally agree with the responses, provided they are addressed.	Sign moved further North

RSA problem	RSA recommendation	Design Organisation response	Overseeing Organisation Response	Agreed RSA action
through red lights and colliding with pedestrians or buses				
Location 5 - Within the alignment of the Bean Tunnel (Drawing No. B2350500-JAC-DRG-HA-0009 Rev P04). Lack of street lighting within the alignment of the Bean Tunnel could result in a potential increased risk of pedestrian and pedal cyclist collisions occurring during daylight and during the hours of darkness, whereby pedestrians and pedal cyclists could sustain personal injury.	It is Recommended that a new system of street lighting should be installed for the complete length of the Bean Tunnel alignment, thus enhancing the operational safety of the overall scheme proposals for pedestrians and pedal cyclists during daylight and during the hours of darkness	Agreed Lighting is provided both on Bluewater Parkway and within the tunnel.	KCC: Agree with DO response. Lighting is being provided within tunnel, on both approaches and modified on Bluewater Parkway as required to meet standards. Lighting design also has to meet bat guidance. Bluewater: Generally agree with the responses, provided they are addressed.	No further action

Further responses from Bluewater as Overseeing Organisation:

I would note that the document provided from Acorn Projects Limited is a Draft document with incomplete information (dates, contacts etc)

Not really sure how valid their site visit would have been as it in no way represents the actual situation that exists as it was in lockdown and the vast majority of the centre was closed.

It is evident from the point raised regarding street lighting that the Audit Team had not been provided with a full package of relevant design information. The same applies to the point raise about the traffic signals, for which information is also outstanding.

5. Design Organisation and Overseeing Organisation Statements

Table F.5 Design Organisation Statement

On behalf of the design organisation I certify that: **1. the RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the Overseeing Organisation.**	
Name:	Lidia Derossi
Signed	[redacted]
Position:	Senior Engineer
Organisation:	Tony Gee LLP
Date:	22/06/2021

Table F.6 Overseeing Organisation Statement

On behalf of the overseeing organisation I certify that: **1. the RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the design organisation; and** **2. the agreed RSA actions will be progressed.**	
Name:	
Signed	
Position:	
Organisation:	
Date:	

Appendix A – RSA Stage 2 Report

Bean Tunnel, Bluewater Parkway, Kent

Proposed Tunnel and Road Widening Scheme

Stage 2 Road Safety Audit

For Tony Gee and Partners LLP

Prepared by Acorns Projects Limited

Safety Traffic Project Management & Highway Engineering Consultants

MARCH 2021

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Safety Traffic Project Management & Highway Engineering Consultants
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Version No: 1.0

Document Location

Ensure that this document is current. Printed documents and locally copied files may become obsolete due to changes to the master document.

This is a controlled document. The source of the document can be found on the file server at location:

C:\Acorns\Clients\TonyGee&Partners\BeanTunnelBluewaterParkwayKent\Reports\BeanTunnelBluewaterParkwayKentStage2RSAV1.0.doc

Revision History

This document has the following history:

Version No.	Version Date	Summary of Changes	Changes marked
1.0	01/03/2021	N/A	N/A

Approvals

This document requires the following approvals:

Name	Title
Adriano B. Cappella	Audit Team Leader
Lisa Allen	Audit Team Member

Distribution

This document has also been distributed to:

Name	Title & Organisation
Lidia Derossi	Project Engineer - Tony Gee & Partners LLP
Justin Ryan	Regional Director - Tony Gee & Partners LLP
Paul Wright	Contracts Manager - Balfour Beatty
Graham Killick	Project Manager - Kent County Council

1.0 INTRODUCTION

1.1 This report results from a Stage 2 Road Safety Audit carried out on the Bean Tunnel, Bluewater Parkway, Kent, Proposed Tunnel and Road Widening Scheme, at the request of the Overseeing Organisation, i.e. the Local Highway Authority, Kent County Council, Major Capital Programme, Invicta House, County Hall, Maidstone, Kent, ME14 1XQ. The Design Organisation is Tony Gee and Partners LLP, Hardy House, 140 High Street, Esher, Surrey, KT10 9QJ, acting on behalf of the Principal Contractor, Balfour Beatty, Churchill Place, Canary Wharf, London, E14 5HU.

1.2 Bean Tunnel is a proposed development to provide a Fastrack busway and a shared footway/cycleway route linking Eastern Quarry (proposed location for a new Garden City) and Bluewater Shopping Centre. This development will comprise of a new bore tunnel (Bean Tunnel) and associated road works to include bi-directional bus, cycling and pedestrian access between Eastern Quarry and Bluewater. The new tunnel will run through the chalk spine, under the existing B255 route. The proposed tunnel will operate as alternate one way, with traffic limited to buses and emergency vehicles only. The access to the tunnel is controlled by traffic signals and enforced by ANPR cameras.

Provision for non-motorised users (NMUs) is made within the tunnel with a combined footway/cycleway and a footway. NMU crossings are provided either side of the tunnel, in the form of toucan crossing to the east and non-controlled crossing to the west. The tunnel joins the existing road network halfway through Bluewater Parkway. The existing northbound Bluewater Parkway road, which links the Northern and Southern roundabout, will be widened from two lanes to incorporate a third lane assigned for bus only use. The works also include the construction of a new combined footway/cycleway on the west side of Bluewater Parkway, connected to the tunnel combined footway/cycleway via a toucan crossing.

1.3 The Audit Team membership was as follows:

Adriano B. Cappella (Audit Team Leader)	IEng, FIHE, MCIHT, MSoRSA, HA RSA Certificate of Competency Director, Acorns Projects Limited
Lisa Allen (Audit Team Member)	MSc, BEng (Hons), MCIHT, MSoRSA, HA RSA Certificate of Competency Associate Consultant, Acorns Projects Limited

1.4 The Audit took place at the Eaton Bray office of Acorns Projects Limited during February and March 2021.

The Audit was undertaken in accordance with the Road Safety Audit Brief document contained within the Design Organisation E-Mail to Acorns Projects Limited dated the 15th February 2021. The Audit comprised an examination of the drawings and documents provided by the Design Organisation and, are listed in Appendix A.

1.5 The drawings, documents and data sheets consisted of a copy of the alignment swept path, site clearance (2 No. sheets), fencing layout and details (3 No. sheets), drainage layout (2 No. sheets), pavement plan and details (3 No. sheets), kerbs and footways and details (3 No. Sheets), traffic signs and road markings (3 No. sheets), lighting, tunnels - general notes, general arrangement, longitudinal section and cross-section (3 No. sheets), the February 2021 Tony Gee & Partners LLP - Bean Tunnel - Road Safety Audit Stage 2 Brief, the February 2021 Tony Gee & Partners LLP - Bean Tunnel - Departures Report, the October 2020 Tony Gee & Partners LLP - Bean Tunnel - Design Input Statement and, the October 2019 Jacobs - Bean Road Tunnel - Stage 1 Road Safety Audit and attached Road Safety Audit Tracking Spreadsheet. Road traffic collision data is contained within the Stage 2 Road Safety Audit Brief document. Vehicular traffic flow data, and pedestrian and pedal cycle information and, public transport information has not been provided for this Stage 2 Road Safety Audit.

1.6 A visit to the site was undertaken between 13.45 pm and 14.35 pm during the afternoon of the 2nd March 2021 by both Audit Team Members together. During the afternoon site visit, the weather was mild with sunny intervals and, the existing carriageway surface was dry. Vehicular traffic conditions at the time of the afternoon site visit were observed to be light and were dominated by buses. No pedestrians or pedal cyclists were observed during the afternoon site visit.

1.7 The terms of reference of the Audit are as described in DMRB GG 119 Road Safety Audit. The Audit Team has examined and reported only on the road safety implications of the scheme as presented and, has not examined or verified the compliance of the designs to any other criteria. However, to clearly explain a safety problem or the recommendation made to resolve the identified problem, the Audit Team may, on occasion, have referred to a Design Standard without touching on technical audit.

1.8 A Departure from Design Standard has been reported by the Design Organisation, as confirmed in the February 2021 Tony Gee and Partners LLP Departures from Standards Report. The Departure from Design Standard is listed as Reference D/BRT/HI/01 and refers to the width of the footway within the Bean Tunnel on the southern side.

The footway proposed on the southern side of the tunnel has an effective width of 1.5m instead of 2m as outlined in DMRB CD 143 Designing for Walking, Cycling and Horse-Riding.

This is due to the requirement to introduce a 0.5m buffer zone from any vertical feature higher than 1.2m, including the tunnel wall, in addition to the 0.5m buffer from the edge of the carriageway. As the total width for the facility is 2.5m, a Departure from Standard is proposed to allow the effective width of the facility to be reduced to 1.5m.

The proposed southern footway does not lie within the desire line for pedestrians; therefore it may be used less than the shared pedestrian and pedal cycle facility on the northern side of the tunnel. This mitigates the consequences of any potential reduced capacity. Importantly, a safe NMU provision on the southern side of the tunnel was considered necessary to provide a safe escape route to passengers in case of a vehicle break-down within the tunnel.

For the mitigating reasons described above, the Audit Team have no adverse operational road safety related comments to make on the footway proposals on the southern side of the Bean Tunnel.

1.9 All Problems and Recommendations are referenced to the design drawings and the locations have been indicated on the A4 plans supplied for use by the Audit Team in Appendix B.

1.10 Issues identified or observations made during this Stage 2 Road Safety Audit and site inspection which the Terms of Reference exclude from this report, but which the Audit Team wishes to draw to the attention of the Overseeing Organisation, i.e. the Local Highway Authority, Kent County Council, will be set out in a separate letter. These issues could include maintenance items and operational issues. The Audit Team has not identified any issues during this Stage 2 Road Safety Audit and site inspection that are considered to be outside the Terms of Reference.

2.0 ITEMS RAISED AT THE STAGE 1 ROAD SAFETY AUDIT

2.1 The safety aspects of the Bean Road Tunnel Scheme were the subject of comment in the October 2019 Stage 1 Road Safety Audit undertaken by Jacobs.

2.2 The Design Organisation, Jacobs, responded to the Stage 1 Road Safety Audit Report, whereby the safety aspects raised were discussed and mitigating measures proposed.

2.3 Items 4.2.1, 4.3.2, 4.3.4 and 4.4.1 of the October 2019 Stage 1 Road Safety Audit undertaken by Jacobs remain a Problem and have been raised again in this Stage 2 Road Safety Audit undertaken by Acorns Projects Limited as Items 3.3.1, 3.4.1, 3.4.2 and 3.5.1.

2.4 Item 4.4.2 of the October 2019 Stage 1 Road Safety Audit undertaken by Jacobs falls outside of the scope of works which are the subject of this Stage 2 Road Safety Audit.

2.5 The remaining issues raised in the October 2019 Stage 1 Road Safety Audit undertaken by Jacobs which were Items 4.1.1, 4.3.1 and 4.3.3, have been resolved via the Jacobs Road Safety Audit Tracking Spreadsheet and subsequent design changes.

3.0 ITEMS RAISED AT THIS STAGE 2 ROAD SAFETY AUDIT

3.1 LOCAL ALIGNMENT

3.1.1 No Problems identified in this category at this Stage 2 Road Safety Audit.

3.2 GENERAL

3.2.1 No Problems identified in this category at this Stage 2 Road Safety Audit.

3.3 JUNCTIONS

3.3.1 PROBLEM

Location 1 - Bluewater Parkway roundabout with Lime Tree Avenue (Drawing No. BRT-TG-XX-ZZ-DR-HI-1201 Rev P01).

The following Problem and Recommendation are taken directly from the October 2019 Stage 1 Road Safety Audit undertaken by Jacobs.

"Summary: *Collisions may occur between vehicles at the roundabout."*

"Description:"

"*Traffic flows heading northbound on Bluewater Parkway were not heavy but it was observed that traffic would queue from the northern roundabout back on to the southern roundabout. A new Toucan crossing may exacerbate this problem and traffic may queue back onto the southern roundabout more regularly. This could cause congestion and frustration amongst motorists, resulting in collisions between vehicles."*

"Recommendation:"

"*Provide a yellow box marking across the southern roundabout, similar to the existing marking on the northern roundabout."*

3.4 WALKING, CYCLING AND HORSE RIDING

3.4.1 PROBLEM

Location 2 - Bluewater Parkway north bound carriageway (Drawing No. BRT-TG-XX-ZZ-DR-HI-1201 Rev P01).

The following Problem and Recommendation are taken directly from the October 2019 Stage 1 Road Safety Audit undertaken by Jacobs.

"Summary: *Collisions may occur between vehicles and pedestrians or cyclists."*

"Description:"

"The alignment of the northern approach to the signals may mean that motorists see a green light for the bus route and fail to see a red light for the Toucan crossing. This could result in vehicles overrunning the red light and collisions between vehicles and pedestrians or cyclists."

"Recommendation:"

"Provide hoods or louvres to ensure that the green light is only visible to bus drivers at the stop line."

The Audit Team would add that the Toucan Crossing traffic signal design drawing has yet to be completed and was not available for this Stage 2 Road Safety Audit.

3.4.2 PROBLEM

Location 3 - The northern verge area of Lime Tree Avenue (Drawing No. BRT-TG-XX-ZZ-DR-HI-1201 Rev P01).

The following Problem and Recommendation are taken directly from the October 2019 Stage 1 Road Safety Audit undertaken by Jacobs.

"Summary: *Cyclists may collide with the posts for the roundabout advanced direction sign (ADS)."*

"Description:"

"The posts for the roundabout sign on Lime Tree Avenue are close together and non-motorised users will not be able to pass between them safely. Cyclists may collide with the posts or users may be forced into the live carriageway to pass one another, resulting in collisions with vehicles."

"Recommendation:"

"Ensure that the sign posts do not create a pinch point on the shared use path."

The Audit Team would add that the existing advanced direction sign (Ref: ES02), has sustained collision damage since the Stage 1 Road Safety Audit. This now presents an ideal opportunity to locate the advanced direction sign to the rear of the proposed shared footway/cycleway, thus maximising the shared facility width with no impediments. It is also Recommended that the existing advanced direction sign should be erected on a single cantilever post.

3.5 TRAFFIC SIGNS, CARRIAGEWAY MARKINGS AND LIGHTING

3.5.1 PROBLEM

Location 4 - B255 and Bluewater Parkway south bound carriageway (Drawing No. BRT-TG-XX-ZZ-DR-HI-1201 Rev P01).

The following Problem and Recommendation are taken directly from the October 2019 Stage 1 Road Safety Audit undertaken by Jacobs.

***"Summary:** Collisions may occur between vehicles and pedestrians or buses."*

"Description:"

"There are several signs on the eastern verge of the B255 and Bluewater Parkway carriageway that may obstruct motorists' forward visibility to the signal heads for the Toucan crossing/bus junction. Providing a 'Traffic Signals Ahead' (to diagram 543) could contribute to this problem. This could mean that motorists fail to see the nearside signal head, resulting in motorists running through red lights and colliding with pedestrians or buses."

"Recommendation:"

"Undertake a signing assessment and remove or relocate signing to improve motorists' forward visibility to the nearside signal head."

3.5.2 PROBLEM

Location 5 - Within the alignment of the Bean Tunnel (Drawing No. B2350500-JAC-DRG-HA-0009 Rev P04).

Summary - Lack of street lighting within the alignment of the Bean Tunnel could result in a potential increased risk of pedestrian and pedal cyclist collisions occurring during daylight and during the hours of darkness, whereby pedestrians and pedal cyclists could sustain personal injury.

Detail - Street lighting design information provided for this Stage 2 Road Safety Audit does not include the alignment of the Bean Tunnel. Within the alignment of the Bean Tunnel, a shared pedestrian and pedal cycle facility will be present on the northern side and a footway/emergency escape route will be present on the southern side.

Concern arises that a lack of street lighting within the alignment of the Bean Tunnel could result in a potential increased risk of pedestrian and pedal cyclist collisions occurring, whereby pedestrians and pedal cyclists could sustain personal injury.

In addition, should a pedestrian or pedal cyclist fall into the vehicular carriageway and be struck by a passing bus, there could be a resultant potential increased risk of pedestrian and pedal cyclist and bus collisions occurring, whereby pedestrians and pedal cyclists could potentially sustain high levels of personal injury.

In addition, a lack of street lighting within the alignment of the Bean Tunnel may result in pedestrians and pedal cyclists feeling vulnerable, which may discourage its use as a safe and suitable route in the future scenario.

RECOMMENDATION

It is Recommended that a new system of street lighting should be installed for the complete length of the Bean Tunnel alignment, thus enhancing the operational safety of the overall scheme proposals for pedestrians and pedal cyclists during daylight and during the hours of darkness.

END OF PROBLEMS IDENTIFIED AND RECOMMENDATIONS OFFERED IN THIS STAGE 2 ROAD SAFETY AUDIT

4.0 AUDIT TEAM STATEMENT

We certify that this Road Safety Audit has been carried out in accordance with DMRB GG 119.

ROAD SAFETY AUDIT TEAM LEADER

Adriano B. Cappella IEng, FIHE, MCIHT, MSoRSA, HA RSA Certificate of Competency

Signed : [redacted]

Associate Consultant

Acorns Projects Limited

Safety Traffic Project Management & Highway Engineering Consultants

Redwood House

3 Eaton Park

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LU6 2SP

Date : 12th March 2021

ROAD SAFETY AUDIT TEAM MEMBER

Lisa Allen MSc, BEng (Hons), MCIHT, MSoRSA, HA RSA Certificate of Competency

Signed : [redacted]

Associate Consultant

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3 Eaton Park

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Bedfordshire

LU6 2SP

Date : 12th March 2021

APPENDIX A

APPENDIX A

BEAN TUNNEL, BLUEWATER PARKWAY, KENT

PROPOSED TUNNEL AND ROAD WIDENING SCHEME

STAGE 2 ROAD SAFETY AUDIT

LIST OF TONY GEE & PARTNERS LLP DRAWINGS SUBMITTED FOR AUDITING

DRAWING NO.	TITLE
BRT-TG-XX-ZZ-DR-HI-0141 Rev P02	Alignment Swept Path
BRT-TG-XX-ZZ-DR-HI-0201 Rev P01	Site Clearance Plan Layout Sheet 1 of 2
BRT-TG-XX-ZZ-DR-HI-0202 Rev P01	Site Clearance Plan Layout Sheet 2 of 2
BRT-TG-XX-ZZ-DR-HI-0301 Rev P01	Fencing Plan Layout Sheet 1 of 2
BRT-TG-XX-ZZ-DR-HI-0302 Rev P01	Fencing Plan Layout Sheet 2 of 2
BRT-TG-XX-ZZ-DR-HI-0311 Rev P01	Fencing Details
BRT-TG-XX-ZZ-DR-HI-0501 Rev P01	Drainage Plan Layout Sheet 1 of 2
BRT-TG-XX-ZZ-DR-HI-0502 Rev P01	Drainage Plan Layout Sheet 2of 2
BRT-TG-XX-ZZ-DR-HI-0701 Rev P01	Pavement Plan Layout Sheet 1 of 2
BRT-TG-XX-ZZ-DR-HI-0702 Rev P01	Pavement Plan Layout Sheet 2 of 2
BRT-TG-XX-ZZ-DR-HI-0711 Rev P01	Pavement Details
BRT-TG-XX-ZZ-DR-HI-1101 Rev P01	Kerbs & Footway Plan Layout Sheet 1 of 2
BRT-TG-XX-ZZ-DR-HI-1102 Rev P01	Kerbs & Footway Plan Layout Sheet 2 of 2
BRT-TG-XX-ZZ-DR-HI-1111 Rev P01	Kerbs & Footway Details
BRT-TG-XX-ZZ-DR-HI-1201 Rev P01	Traffic Signs & Road Markings Plan Layout Sheet 1 of 2
BRT-TG-XX-ZZ-DR-HI-1202 Rev P01	Traffic Signs & Road Markings Plan Layout Sheet 2 of 2
BRT-TG-XX-ZZ-DR-HI-1211 Rev P01	Traffic Signs & Road Markings Details
BRT-TG-XX-TU-DR-TU-7001.DWG Rev P01	Tunnels General Notes
BRT-TG-XX-TU-DR-TU-7100.DWG Rev P01	Tunnels General Arrangement Plan & Longitudinal Section
BRT-TG-XX-TU-DR-TU-7101.DWG Rev P01	Tunnels General Arrangement Cross-Section

LIST OF JACOBS DRAWINGS REVIEWED AT THIS STAGE 2 ROAD SAFETY AUDIT

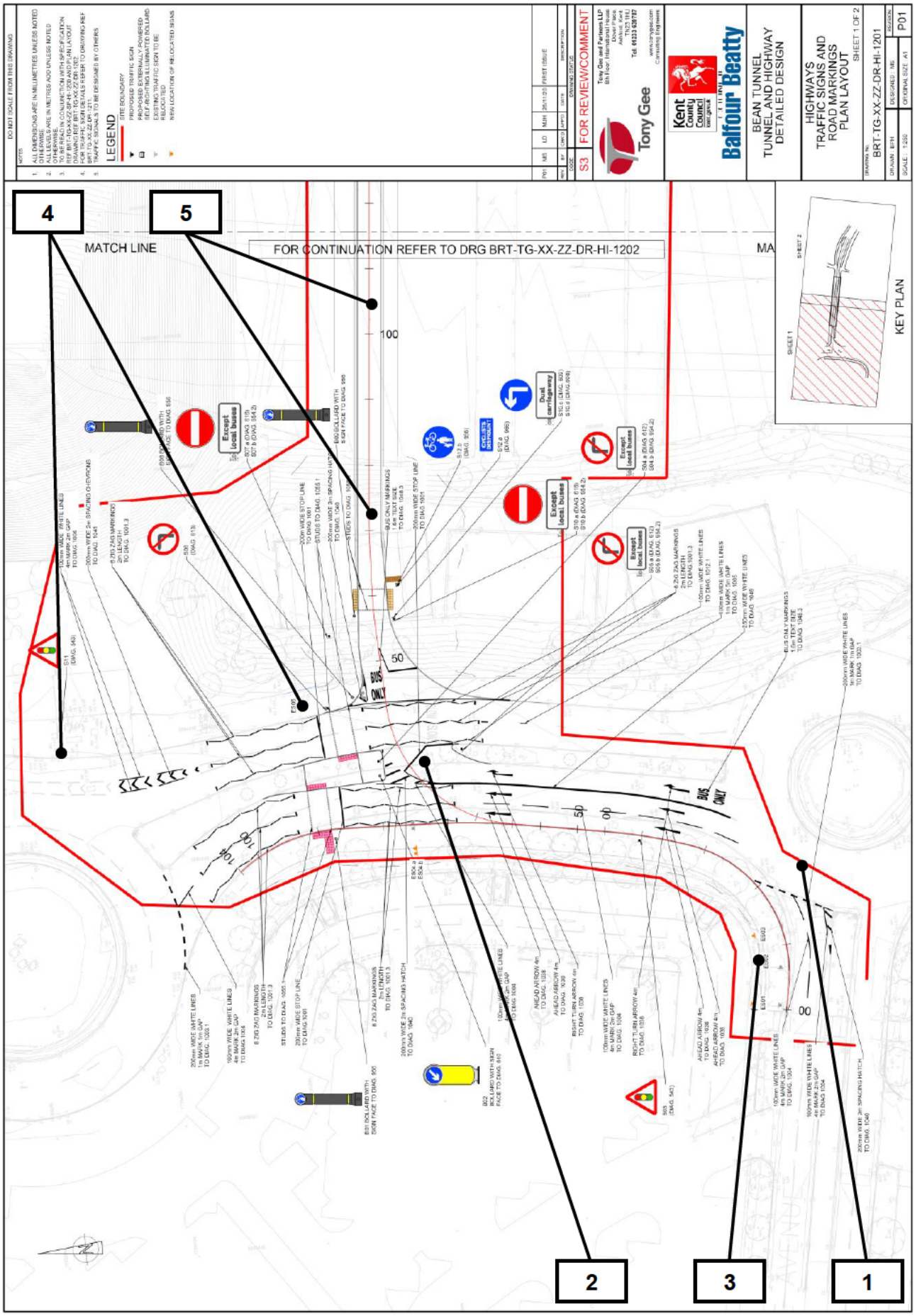
DRAWING NO.	**TITLE**
B2350500-JAC-DRG-HA-0001 Rev P05	Reference Design Site Plan
B2350500-JAC-DRG-HA-0002 Rev P05	Reference Design General Arrangement Plan
B2350500-JAC-DRG-HA-0009 Rev P04	Lighting Design (Issued for information only, not suitable for Construction) (01 of 02)

LIST OF DOCUMENTS REVIEWED AT THIS STAGE 2 ROAD SAFETY AUDIT

Tony Gee & Partners LLP - BRT-TG-XX-ZZ-RP-HS-0102 - Bean Tunnel - Road Safety Audit Stage 2 Brief - 15th February 2021
Tony Gee & Partners LLP - BRT-TG-XX-ZZ-RP-HI-0101 - Bean Tunnel - Departures Report - 04/02/2021
Tony Gee & Partners LLP - BRT-TG-XX-ZZ-RP-HI-0003 - Bean Tunnel - Design Input Statement - Balfour Beatty - 28/10/2020
Jacobs - Bean Road Tunnel - Stage 1 Road Safety Audit and Road Safety Audit Tracking Spreadsheet - October 2019

APPENDIX B

APPENDIX B - PROBLEM LOCATION PLAN - SHEET 1 OF 2



APPENDIX B - PROBLEM LOCATION PLAN - SHEET 2 OF 2